CLAIMS

[1] A solid-state laser apparatus for amplifying light to be amplified by propagating the light in a zigzag fashion in a slab-shaped solid-state laser medium,

the apparatus comprising a flow path adapted to circulate a coolant in a direction substantially perpendicular to a propagating surface for the light and bring the coolant in contact with a pair of reflecting end faces for reflecting the light in the solid-state laser medium.

[2] A solid-state laser apparatus according to claim 1, wherein, between an inlet of the flow path and the solid-state laser medium, a flow-shaping member having a cross-sectional form widening from the inlet side toward each of the reflecting end faces is arranged.

[3] A solid-state laser apparatus according to claim 1 or 2, wherein a turbulence generating member adapted to turn a coolant flow into a turbulent flow is arranged between the inlet of the flow path and the solid-state laser medium.

[4] A solid-state laser apparatus according to one of claims 1 to 3, wherein optical members adapted to absorb spontaneously emitted light generated in the solid-state laser medium are arranged on a pair of parallel end faces substantially parallel to the propagating surface in the solid-state laser medium.

[5] A solid-state laser apparatus according to one of claims 1 to 3, wherein heat-insulating members are arranged on a pair of parallel end faces substantially parallel to the propagating surface in the solid-state laser medium.

[6] A solid-state laser apparatus according to one of claims 1 to 3, wherein, on a pair of parallel end faces substantially parallel to the propagating surface in the solid-state laser medium, heat-insulating members are arranged by way of optical members adapted to absorb spontaneously emitted light generated in the solid-state laser medium.

[7] A solid-state laser apparatus according to one of claims 1 to 6, wherein, in an entrance/exit part at each end of the solid-state laser medium where the light to be amplified enters or exits, a corner part is chamfered into a curved surface; and

wherein an O-ring is fitted to the entrance/exit part between a holding part forming at least a part of a side wall of the flow path while holding the entrance/exit part and the entrance/exit part.